PALOMAR ENERGY PROJECT (01-AFC-24)
CEC STAFF DATA REQUEST NUMBER 2

Technical Area: Air Quality **Response Date: April 8, 2002**

REQUEST:

Please identify proposed BACT levels for NO_x and CO from the gas turbines that match the 2 ppmvd levels specified by the U.S. EPA, or provide a BACT analysis that demonstrates such limitations are not achievable.

RESPONSE:

The Palomar AFC and application to the San Diego Air Pollution Control District (SDAPCD) provided a "top down" analysis in accordance with EPA guidelines. The SDAPCD will review the BACT analysis and proposal contained in the applications in the course of preparation of the Determination of Compliance (DOC) as required by the CEC siting regulations, sec. 1744.5.

The AFC and DOC application identified BACT for NO_x control as 2.0 ppmvd at 15% O_2 averaged over 3 hours, consistent with the recent SDAPCD determination for the Otay Mesa Generating Station. In the past year, many power plants have been permitted in California and elsewhere. Most of these plants have been permitted with a NO_x emission limit of 2.5 ppmvd at 15% O_2 or greater averaged over 1 or 3 hours. Only two projects in California have been permitted with NO_x emission limits of 2.0 ppmvd at 15% O_2, the Otay Mesa project with a 3-hour average and Sunrise Phase II project with a 1-hour average. Neither of these two projects have been built or operated, and as such cannot be considered "as achieved in practice". In order to be considered LAER, an emission level must have been achieved in practice, not merely required in a permit.

The EPA letter identifies a turbine at UC San Diego that has met a 2.0 ppm level, but the letter does not identify the averaging period used for compliance, how long the facility has been in operation, or if any exceedances of this level were observed during the operating period. We assume that the referenced facility consists of the two small 13 MW Solar Titan gas turbines at UC San Diego that were identified in the Palomar BACT Analysis. If so, these units are much smaller than those proposed by Palomar and do not have duct firing. The size, type and configuration (duct fired) differences of the Palomar turbines justify the longer averaging period.

Although a few other agencies have issued permits with NO_x emission limits of 2.0 ppmvd at 15% O_2 over a 1-hour average for larger power plants, some of which include duct firing, there are no operating plants where this level has been achieved in practice.

Similarly, the lowest CO emission limit of other California projects permitted in the last two years is 4.0 ppmvd at 15% O_2 (3-hr avg). We are not aware of any data that was used for the Massachusetts permits that show that 2.0 ppmvd at 15% O_2 level has been demonstrated in practice on a long-term basis for a plant with duct firing, especially when a very low NO_x level is required as well. Therefore, Palomar has proposed a CO emission limitation of 4.0 ppmvd at 15% O_2, which represents the lowest CO emission limitation demonstrated in practice on a similar size combustion turbine facility.